

NASA TECH BRIEF



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Division, NASA, Code UT, Washington, D.C. 20546.

Optically Activated Magnetic Recording Tape

An optically activated data storage medium has been developed on which the recorded signal can be seen as well as electromagnetically reproduced.

On the recording tape is a thermoplastic layer in which rod-shaped, electrically conductive, half-wave dipole particles are embedded. The particles remain fixed until the thermoplastic layer is fluidized by heat. When this is done in the presence of an electric field, the dipoles are aligned with the field, and the particle concentration forms a visible image of the recorded signal. A focused laser beam supplies the heat to locally fluidize the thermoplastic layer.

Recorded signals may be erased by again fluidizing the thermoplastic layer and randomizing the orientation of the dipoles by applying a rapidly fluctuating electric field.

Because of the extremely small area heated by the focused laser beam, very high data packing densities may be achieved by this system.

Note:

Requests for further information may be directed to:
Technology Utilization Officer
Goddard Space Flight Center
Code 207.1
Greenbelt, Maryland 20771
Reference: B70-10247

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: Arnold Shulman
Goddard Space Flight Center
and A. M. Marks of
Marks Polarized Corp.
under contract to
Goddard Space Flight Center
(GSC-10275, 10276)

Category 01